

WHAT IS CLAIMED IS:

1. A brake disc, comprising:
a hub portion;
a friction portion; and
a connecting flange portion, wherein
the connecting flange portion extends from an outer radius of the hub
portion to an inner radius of the friction portion,
the connecting flange portion has a length such that when the hub
portion and a wheel rim adapted to be mounted on a hub end of a
vehicle axle are located at the hub end of the axle, the friction
portion is outboard of the wheel rim, and
the friction portion has an outer radius greater than an inner radius of
the wheel rim.
2. The brake disc of claim 1, wherein the connecting flange portion is
cylindrical.
3. The brake disc of claim 1, wherein the brake disc is a one-piece brake
disc.
4. The brake disc of claim 1, wherein at least one heat-conduction limiting
section is provided on at least one of the connecting flange portion and the
friction portion.

5. The brake disc of claim 4, wherein the at least one heat-conduction limiting section includes a section having a reduced thickness.
6. The brake disc of claim 5, wherein the reduced thickness section is shaped as a ring.
7. The brake disc of claim 1, wherein at least one ventilation aperture is provided in the connecting flange portion.
8. The brake disc of claim 5, wherein at least one ventilation aperture is provided in the connecting flange portion.
9. The brake disc of claim 6, wherein at least one ventilation aperture is provided in the connecting flange portion.
10. The brake disc of claim 1, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.
11. The brake disc of claim 5, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

12. The brake disc of claim 6, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

13. The brake disc of claim 7, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

14. The brake disc of claim 8, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

15. The brake disc of claim 9, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

16. A vehicle axle assembly, comprising:
a vehicle axle; and
a disc brake disposed at a hub end of the vehicle axle, the disc brake including:

a brake caliper adapted to be affixed to a caliper mount on the vehicle axle, and

a brake disc disposed on a hub end of the vehicle axle such that a braking force generated by the brake caliper is applied to the brake disc, the brake disc including:

a hub portion;

a friction portion; and

a connecting flange portion, wherein

the connecting flange portion extends from an outer radius of

the hub portion to an inner radius of the friction portion,

the connecting flange portion has a length such that when

the hub portion and a wheel rim adapted to be mounted

on a hub end of the vehicle axle are located at the hub end

of the axle, the friction portion is outboard of the wheel

rim, and

the friction portion has an outer radius greater than an inner

radius of the wheel rim.

17. The axle assembly of claim 16, wherein at least one heat-conduction limiting section is provided on at least one of the connecting flange portion and the friction portion.

18. The axle assembly of claim 17, wherein the at least one heat-conduction limiting section includes a section having a reduced thickness.

19. The axle assembly of claim 18, wherein the reduced thickness section is shaped as a ring.

20. The axle assembly of claim 16, wherein at least one ventilation aperture is provided in the connecting flange portion.

21. The axle assembly of claim 18, wherein at least one ventilation aperture is provided in the connecting flange portion.

22. The axle assembly of claim 19, wherein at least one ventilation aperture is provided in the connecting flange portion.

23. The axle assembly of claim 16, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

24. The axle assembly of claim 18, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

25. The axle assembly of claim 19, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

26. The axle assembly of claim 20, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

27. The axle assembly of claim 21, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.

28. The axle assembly of claim 22, wherein a plurality of cooling fins are disposed about an inner radius of the friction portion.